

REMARKS/ARGUMENTS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1-26 are pending in the present application. Claims 1, 3-9, and 12-20 have been amended. Claims 1, 9, and 21 are independent claims. The Examiner is respectfully requested to reconsider his rejections in view of the Amendments and the following Remarks.

Allowable Subject Matter

It is gratefully acknowledged that the Examiner considers the subject matter of claims 3, 8, and 15 as being allowable if rewritten in independent form. However, Applicants have not amended these claims in independent form because it is earnestly believed that they depend on claims that are allowable at least for reasons set forth herein below.

Claim for Priority

It is gratefully acknowledged that the Examiner has recognized Applicant's claim for foreign priority. In view of the fact that Applicant's claim for foreign priority has been perfected, no additional action is required from Applicant at this time.

Specification

The specification has been amended to correct a minor typographical error. It is respectfully submitted that no new matter has been added by this amendment.

Drawings

It is gratefully acknowledged that the Examiner has accepted the Formal Drawings filed on July 30, 2001 for examination purposes. It is respectfully submitted that the Formal Drawings comply with the requirements of the USPTO. If the Official Draftsman has any objections to the Formal Drawings he is respectfully requested to contact the undersigned as soon as possible so that appropriate action may be taken.

Acknowledgment of Information Disclosure Statement

The Examiner has acknowledged the Information Disclosure Statements filed on July 30, 2001; August 14, 2001; June 13, 2003; and October 24, 2003. An initialed copy of each of the PTO-1449s has been received from the Examiner. No further action is necessary at this time.

Rejection Under 35 U.S.C. § 103

Agassy/APA Rejection

Claims 1, 2, 4, 6, 7, 9-14, 16, and 18-20 stand rejected under 35 USC § 103(a) as being unpatentable over U.S. Patent No. 6,424,940 to Agassy et al. (hereinafter Agassy) in view of Applicants' admitted prior art (hereinafter APA). This rejection is respectfully traversed.

Synopsis of Agassy

Agassy discloses a method for determining compensated scaling for voice-band data (VBD) type transmissions, such as modem signals and DTMF signals. Agassy specifically discloses that the disclosed method is for use in a process of encoding/decoding VBD type transmissions in a non-adaptive predicting type algorithm. Such an algorithm utilizes Trellis Coded Quantization (TCQ) to replace the analysis-by-synthesis (ABS) approach to codebook search. See, e.g., col. 2, lines 9-11 and lines 63-66; col. 3, lines 1-5; col. 6, lines 12-21; and Fig. 1.

Synopsis of APA

On the other hand, in Figs. 27-31, the APA discloses various conventional systems for encoding both non-speech signals (e.g., DTMF) and speech signals.

The APA system illustrated in Fig. 27 does not discriminate between speech and non-speech signals, but rather, encodes both types of signals using the same coding algorithm. This causes problems because the generation of line spectral pair (LSP) directly affects the frequency distortion of non-speech signals. See page 8, line 23 - page 9, line 7 of the specification.

The APA also discloses encoding/decoding systems in Figs. 29-31 in which non-speech signals are detected, and a different coding algorithm is applied to input signals detected as non-speech signals, than for those determined to be speech signals. Figs. 30 and 31 illustrate a system in the APA, which discriminates the input signal as speech and non-speech (using the speech/non-speech signal discriminator 602), and uses a selector switch to divert the input signal to either a function coding block for speech signals 611 or a function coding block for non-speech signals 612 based on the result of discrimination. See page 9, line 23 - page 14, line 3 of the specification.

The systems of the APA in Figs. 29-31 are problematic because they require the simultaneous replacement of encoding

and decoding apparatuses at the sending and receiving sides. If equipment for either of the systems illustrated in Figs. 29-31 is implemented only at the transmitting side, and not at the receiving side, the apparatus at the receiving side will be unable to satisfactorily receive the non-speech signals. See page 14, lines 8-26 of the specification.

Prima Facie Case of Obviousness Not Established

To establish a *prima facie* case of obviousness, three basic criteria must be met: (1) there must be some suggestion of motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference must teach or suggest all the claim limitations. See *In re Vaeck*, 947 F.2d 48, 20 USPQ2d 1438 (Fed. Cir. 1991).

In the Office Action, the Examiner admits that Agassy fails to disclose "deciding as to whether the input signal is a speech signal or a non-speech signal" (Office Action at page 3). However, the Examiner asserts that it would have been obvious to one of ordinary skill in the art to use the discriminating means of the APA "so that will reduce error calculation for speech

signal for gain compensation [sic]" (Id.). Applicants respectfully submit that such a statement fails to provide any motivation for combining Agassy with the APA to those of ordinary skill in the art.

Furthermore, even assuming for the sake of argument that motivation existed to combine Agassy and the APA, Applicants respectfully submit that the combination fails to teach or suggest every feature of the claimed invention.

Claim 1

Independent claim 1 recites selecting codewords corresponding to the frequency parameters output for both speech and non-speech signals by referring to the same quantization codebook, where the frequency parameters output for non-speech signals are obtained by correcting certain frequency parameters. This feature is neither taught nor suggested by the Agassy/APA combination.

As discussed above, Agassy discloses an encoding method specifically for non-speech VBD signals, such as modem or DTMF signals. Agassy specifically uses TCQ quantization coding and, thus, teaches away from using adaptive linear predicting algorithm and ABS (analysis-by-synthesis). As such, Agassy teaches away from obtaining excitation vectors from an adaptive

codebook and synthesizing them with quantization codes for the input signal.

On the other hand, the APA specifically teaches that speech signals are encoded using LSP quantization codes and ABS. Particularly, the APA discloses that excitation codes are obtained from an adaptive codebook and sent to a synthesis filter 207, along with the selected LSP quantization codes. As such, the APA teaches away from using the TCQ method for speech signals.

Applicants respectfully submit that, at most, the Examiner's proposed combination of Agassy and the APA would result in a system that discriminates between speech and non-speech input signals, and applies a completely different encoding system to each. For example, the Agassy/APA combination could be implemented according to the configuration in Fig. 30 of the APA, in which separate coding function blocks are used.

Accordingly, the Agassy/APA combination would utilize different quantization codebooks for selecting codewords for speech and non-speech signals. In other words, Agassy/APA would refer to a TCQ-compatible quantization codebook for the non-speech VBD signals (as disclosed in Agassy), and refer to an LSP quantization codebook for speech signals (as disclosed in the APA).

Thus, it is respectfully submitted that the Agassy/APA combination fails to teach or suggest selecting codewords for the frequency parameters of speech and non-speech signals from the same quantization codebook, as required by independent claim 1.

Claim 9

Claim 9 recites generating frequency parameters for the input signal, selecting codewords corresponding to the frequency parameters by referring to a quantization codebook when the input signal is speech, and selecting codewords corresponding to the frequency parameters by referring to a subset of the same quantization codebook when the input signal is not speech. Applicants respectfully submit that the Agassy/APA combination fails to teach or suggest these features.

As discussed above in connection with claim 1, the Agassy/APA combination would, at most, suggest referring to different types of quantization codebooks for speech and non-speech signals. In other words, a TCQ codebook would be referred to for non-speech signals, and a LSP codebook would be referred to for speech signals.

Agassy/APA Rejection Should be Withdrawn

Applicants respectfully submit that claims 1 and 9 are allowable at least for the reasons set forth above. In addition, it is respectfully submitted that claims 2, 4, 6, 7, 10-14, 16, and 18-20 are allowable at least by virtue of their dependency on claims 1 and 9. Thus, reconsideration and withdrawal of this rejection is respectfully requested.

Agassy/APA/Lee Rejection

Claims 5 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Agassy and the APA, and further in view of U.S. Patent No. 5,913,189 to Lee et al. (hereinafter Lee). Applicants respectfully submit that Lee fails to remedy the deficiencies set forth above in connection with independent claims 1 and 9. Thus, it is respectfully submitted that claims 5 and 17 are allowable at least by virtue of their dependency on claims 1 and 9. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

New Claims

Applicants have filed new claims 21-26 in the present application. Applicants respectfully submit that filing of these

new claims do not add any new matter to the present application. Specifically, Applicants submit that the subject matter of these new claims is supported by the originally filed application at, *inter alia*, the originally filed claims; page 30, lines 4-19; and page 57, line 10 - page 60, line 12.

Furthermore, Applicants respectfully submit that the features of new independent claim 21 are not taught or suggested by the references cited by the Examiner, either taken separately or in combination with one another.

No Prosecution History Estoppel

Claims 1, 3-9, and 12-20 have been amended to remove "means plus function" terminology from the claims. Applicants respectfully submit that the amendments to claims 1, 3-9, and 12-20 are not narrowing. It is further submitted that the amendments were not made for a reason relating to patentability. Accordingly, it is submitted that these amendments do not give rise to estoppel and, in future analysis, these claims are entitled to their full range of equivalents.

Conclusion

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but to merely show the state of the art, no comment need be made with respect thereto.

In view of the above remarks, it is believed that the claims clearly distinguish over the references relied on by the Examiner, either alone or in combination.

Should the Examiner believe that any outstanding matters remain in the present application, the Examiner is respectfully requested to contact Jason W. Rhodes (Reg. No. 47,305) at the telephone number of the undersigned to discuss the present application in an effort to expedite prosecution.


If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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